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The COVID-19 Pandemic and Ecological Connectivity

Implications for International Criminal Law and Transitional Justice

Janine Natalya Clark*

Abstract

The ongoing COVID-19 pandemic has affected multiple aspects of our lives. This interdisciplinary article reflects on the significance of the pandemic from a largely unexplored angle, through a focus on the key concept of ecological connectivity, which broadly refers to the inter-connections between different elements of an ecosystem. Examining the pandemic through the lens of ecological connectivity, the article also theorizes it (and zoonotic diseases more generally) as a violation of this connectivity. It uses this idea as a core thread for linking COVID-19, international criminal law, and transitional justice. Its key argument in this regard is that war crimes and human rights violations can themselves be viewed, in part, as violations of ecological connectivity. This theorization, in turn, provides a novel basis for thinking about the wider ecological dimensions and legacies of war crimes and gross violations of human rights, and, by extension, the potential role of international criminal law and transitional justice in helping to restore damaged connectivities through a relational approach to justice.

‘Nature teaches us that life is not just for itself, but also for others’.¹

1. Introduction

In his discussion of what he terms ‘liquid modernity’, Bauman reflects: ‘I am increasingly inclined to surmise that we presently find ourselves in a time of “interregnum” — when the old ways of doing things no longer work, the old learned or inherited modes of life are no longer suitable for the current *conditio humana* ...’.² In 2020, these words have taken on particular poignancy and resonance. The SARS-COV-2 pandemic (which will be referred to

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¹ J.E. Koons, ‘Earth Jurisprudence: The Moral Value of Nature’, 25 *Pace Environmental Law Review* (2008) 263–340, at 339.

² Z. Bauman, *Liquid Modernity* (Polity, 2012), at vii.

in this article using the more commonly-used name COVID-19) has ‘shut down’ the world in ways that, just a year ago, might have seemed unimaginable, thereby creating unprecedented uncertainty for millions of people around the globe.

Like a giant squid, the arms and tentacles of COVID-19 have reached into every aspect of our lives. The two feeding tentacles of a squid, substantially longer than the eight arms, ‘can stretch as they decay’.³ This interdisciplinary article stretches one of the pandemic’s ‘tentacles’ in a new direction. It does so specifically by exploring the significance of COVID-19 for international criminal law and transitional justice — the latter defined as ‘that set of practices, mechanisms and concerns that arise following a period of conflict, civil strife or repression, and that are aimed directly at confronting and dealing with past violations of human rights and humanitarian law’.⁴

An obvious linkage between COVID-19, international criminal law and transitional justice is the potential for armed conflict and violence to exacerbate the pandemic. In their 2018–2019 research on Ebola in the Democratic Republic of Congo (DRC), for example, Wells and others underlined that ‘[t]he chronic conflict in North Kivu and Ituri has stymied surveillance, contact tracing, and vaccination Case identification and containment of Ebola becomes even more difficult in areas that are too dangerous for health workers to enter or work.’⁵ Similarly focused on the DRC, Merode and Cowlshaw found that the armed conflict had resulted in a significant increase in urban areas in the sale of bushmeat⁶ — a major animal –to–human disease transmission route.⁷ Years of conflict and instability can also critically weaken a country’s capacity to provide adequate medical treatment and care to those infected with disease. In war-torn Yemen, for example, the entire healthcare system ‘is already overwhelmed with treating casualties from the conflict [which began in late 2014]

³ T. Kubodera and K. Mori, ‘First-Ever Observations of a Live Giant Squid in the Wild’, 272 *Proceedings of the Royal Society B* (2005) 2583–2586, at 2585.

⁴ N. Roht-Ariza, ‘The New Landscape of Transitional Justice’, in N. Roht-Arriaza and J. Mariezcurrena (eds), *Transitional Justice in the Twenty-First Century: Beyond Truth Versus Justice* (Cambridge University Press, 2006) 1–16, at 2.

⁵ C.R. Wells, A. Pandey, M.L. Ndeffo Mbah, B.A. Gaüzère, D. Malvy, B.H. Singer and A.P. Galvani, ‘The Exacerbation of Ebola Outbreaks by Conflict in the Democratic Republic of Congo’, 116 *Proceeding of the National Academy of Sciences of the United States of America* (PNAS) (2019) 24366–24372, at 24366.

⁶ E. de Merode and G. Cowlshaw, ‘Species Protection, the Changing Informal Economy and the Politics of Access to the Bushmeat Trade in the Democratic Republic of Congo’, 20 *Conservation Biology* (2004) 1262–1271, at 1269.

⁷ W.B. Karesh and E. Noble, ‘The Bushmeat Trade: Increased Opportunities for Transmission of Zoonotic Disease’, 76 *Mount Sinai Journal of Medicine: A Journal of Translational and Personalized Medicine* (2009) 429–434, at 431.

and those who contracted other contagious diseases’,⁸ and a large number of healthcare workers have left the country. Pandemics, moreover, can easily spread in congested prisons and detention centres. In this regard, the United Nations (UN) Rapporteur on the Promotion of Truth, Reparation and Guarantees of Non-Recurrence — Fabián Salvioli — has underscored that ‘States have a greater duty to prevent violations of the rights of persons deprived of their liberty, avoiding overcrowding and ensuring hygiene and sanitation in prisons and other detention centres’.⁹

This article, however, is not about the impact of violence and human rights violations on societies’ ability to deal with the pandemic. Instead, it analyses a less obvious relationship between COVID-19, international criminal law, and transitional justice, thus further stretching the aforementioned ‘tentacle’. In a giant squid, the ‘muscle fibers are circularly and radially oriented and tightly connected with connective tissue fibers’.¹⁰ This research is centrally about connectivity, and more specifically about ‘ecological connectivity’, which broadly refers to the inter-connections between different elements of an ecosystem, such as land and sea.¹¹

In a recently published letter to the *Chinese Journal of International Law*, Wang underlines that far from being the end of globalism, the COVID-19 pandemic ‘offers a timely reminder of humanity’s interdependence in this changing world’.¹² Similarly emphasizing this interdependence, the present article submits that just as the pandemic highlights ‘multiple, complex social-ecological interactions’,¹³ its zoonotic (transmission from an animal to a human) origins can also be read as violations of ecological connectivity. Extending this argument to international criminal law and transitional justice, it maintains that inhumanities and human rights abuses do not only constitute violations of laws, *jus*

⁸ N. El Bejjani Noureddine, ‘COVID-19 Set to Deepen Yemen’s Humanitarian Crisis’, April 2020, available at <https://www.ictj.org/news/COVID-19-set-deepen-yemen%E2%80%99s-humanitarian-crisis> (visited 2 May 2020).

⁹ UN Human Rights Office of the High Commissioner, ‘COVID-19: “No Excuse for Impunity for Those Convicted of Crimes against Humanity” – UN Expert on Transitional Justice’, April 2020, available at <https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=25840&LangID=E> (visited 5 May 2020).

¹⁰ A. Singh, A. Mittal and S. Benjakul, ‘Full Utilization of Squid Meat and its Processing By-Products’, *Food Reviews International* (2020), doi: 10.1080/87559129.2020.1734611.

¹¹ See, for example, X. Fang, X. Hou, X. Li, W. Hou, M. Nakaoka and X. Yu, ‘Ecological Connectivity between Land and Sea: A Review’, 33 *Ecological Research* (2018) 51–61.

¹² C. Wang, ‘To Cope with a New Coronavirus Pandemic: How Life May Be Changed Forever’, *Chinese Journal of International Law* (2020), doi: 10.1093/chinesejil/jmaa020.

¹³ J. Pittman and D. Armitage, ‘Governance across the Land-Sea Interface: A Systematic Review’, 64 *Environmental Science and Policy* (2016) 9–17, at 9.

cogens and/or rights: they can also be interpreted as violations of ecological connectivity in the sense that they contribute to breaking, or rupturing, the innate connectivity between humans and their environments, both in a ‘green’ sense and in a broader social sense. This theorization, in turn, provides an unexplored basis for thinking about the wider ecological dimensions and legacies of war crimes and gross violations of human rights, the potential role of international criminal law and transitional justice in helping to restore damaged connectivities and the wider relational implications of this.

Taking as its starting point the etiology of COVID-19, the article’s first section examines the significance of zoonoses from a social-ecological perspective; and, in particular, it underscores the role of humans themselves in processes of zoonotic spillover. In so doing, it frames the pandemic as reflecting violations of ecological connectivity. The second section transposes this ecological thematic to a legal context, specifically examining whether and to what extent the fields of international law and transitional justice have paid attention to ecological dimensions of crimes and human rights abuses in the sense of their environmental effects. It demonstrates that notwithstanding some important developments, including Article 8(2)(b)(iv) of the Rome Statute of the International Criminal Court (ICC), anthropocentric concerns largely remain paramount. The legal philosophy of Earth Jurisprudence represents an important eco-centric attempt to change this. The governance ideals that it promotes, however, have had limited resonance in a world where power politics ultimately dominates. As Killean notes, ‘the concept of international environmental crime has failed to gain much traction in the rapidly expanding area of international criminal law’.¹⁴ It is not the aim of this article, however, to make the case for an international crime of ecocide.¹⁵ Taking a different approach, the final section develops the core proposition that the crimes and abuses that fall within the purview of international criminal law and transitional justice can themselves be conceptualized as violations of ecological connectivity. It explores this argument both *stricto sensu* and *sensu lato*.

2. COVID-19, Zoonoses and Ecological Connectivity

¹⁴ R. Killean, ‘From Ecocide to Eco-Sensitivity: “Greening” Reparations at the International Criminal Court’, *International Journal of Human Rights* (2020), doi: 10.1080/13642987.2020.1783531.

¹⁵ See, for example, P. Higgins, D. Short and N. South, ‘Protecting the Planet: A Proposal for a Law of Ecocide’, 59 *Law, Crime and Social Change* (2013) 251–266; M. Crook and D. Short, ‘Marx, Lemkin and the Genocide–Ecocide Nexus’, 18 *International Journal of Human Rights* (2014) 298–319.

Various conspiracy theories about COVID-19 continue to circulate, including claims about a secret Chinese biological weapons programme¹⁶ and the radiation effects of 5G (fifth generation cellular wireless).¹⁷ However, strong evidence exists that the virus — which has been linked to a so-called ‘wet’ market in Wuhan in China¹⁸ — originated in bats,¹⁹ before ‘jumping’ to one or more hosts and infecting humans.²⁰ Previous Coronavirus outbreaks, namely SARS (Severe Acute Respiratory Syndrome) and MERS (Middle East Respiratory Syndrome), have also been traced to bats.²¹ In other words, both COVID-19 and previous Coronaviruses are zoonotic diseases that are transmitted from animals to humans.

While COVID-19 has attracted an unprecedented level of global attention, most zoonoses have a much lower profile. Nevertheless, they are extremely common. Indeed, ‘[t]he majority of pathogen species causing disease in humans are zoonotic’.²² The UN Environment Programme (UNEP), similarly, underlines that ‘60 per cent of all infectious diseases in humans are zoonotic, as are 75 per cent of all *emerging* infectious diseases’.²³ In addition to SARS, MERS, and COVID-19, there are many other significant zoonoses; these include Ebola (linked to various animals, such as fruit bats, chimpanzees and monkeys), Nipah virus (which can be transmitted to humans by bats and pigs), Hendra virus (spread by

¹⁶ D. Weinland and E. Zhou, ‘Conspiracy Theories Flourish as Coronavirus Resurfaces in China’, June 2020, available at <https://www.ft.com/content/ba1be5f9-a237-4d3b-95a0-41aaa9554d9b> (visited 14 July 2020).

¹⁷ J. Goodman and F. Carmichael, ‘Coronavirus: 5G and Microchip Conspiracies around the World’, June 2020, available at <https://www.bbc.co.uk/news/53191523> (visited 17 October 2020).

¹⁸ D.F. Maron, ‘“Wet Markets” Likely Launched the Coronavirus. Here’s What You Need to Know’, April 2020, available at <https://www.nationalgeographic.co.uk/science-and-technology/2020/04/wet-markets-likely-launched-coronavirus-heres-what-you-need-know> (visited 18 April 2020).

¹⁹ C. Salata, A. Calistri, C. Parolin and G. Palù, ‘Coronaviruses: A Paradigm of New Emerging Zoonotic Diseases’, *77 Pathogens and Disease* (2019) 1–5, at 3; M.E. El Zowalaty and J.D. Järhult, ‘From SARS to COVID-19: A Previously Unknown SARS-Related Coronavirus (Sars-CoV-2) of Pandemic Potential Infecting Humans – Call for a One Health Approach’, *9 One Health* (2020) 1–6, at 4. Plowright et al. point out that ‘Bats are hosts of some of the most significant recently emerging zoonoses and, since 1994, four novel human pathogens have emerged from bats of the genus *Pteropus* (fruit bats, known as flying foxes) alone’. R.K. Plowright, P. Foley, H.E. Field, A.P. Dobson, J.E. Foley, P. Eby and P. Daszak, ‘Urban Habitation, Ecological Connectivity and Epidemic Dampening: The Emergence of Hendra Virus from Flying Foxes (*Pteropus*. Spp.)’, *278 Proceedings of the Royal Society B* (2011) 3703–3712, at 3703.

²⁰ Lu et al., for example, note in relation to SARS and MERS that while ‘bats acted as the natural reservoir’, another animal — namely masked palm civets and dromedary camels respectively — acted as ‘an intermediate host, with humans as terminal hosts’. R. Lu, X. Zhao, J. Li, P. Niu, B. Yang, H. Wu, W. Wang, H. Song, B. Huang, N. Zhu, Y. Bi, X. Ma, F. Zhan, L. Wang, T. Hu, H. Zhou, Z. Hu, W. Zhou, L. Zhao, J. Chen, Y. Meng, J. Wang, Y. Lin, J. Yuan, Z. Xie, J. Ma, W.J. Liu, D. Wang, W. Xu, E.C. Holmes, G.F. Gao, G. Wu, W. Chen, W. Shi and W. Tan, ‘Genomic Characterisation and Epidemiology of Novel 2019 Coronavirus: Implications for Virus Origins and Receptor Binding’, *395 The Lancet* (2020) 565–574, at 573.

²¹ P.I. Lee and P.R. Hsueh, ‘Emerging Threats from Zoonotic Coronaviruses – From SARS and MERS to 2019-nCoV’, *53 Journal of Microbiology, Immunology and Infection* (2020) 1–3, at 1; Lu et al., *ibid.*, at 573.

²² L.H. Taylor, S.M. Latham and M.E.J. Woolhouse, ‘Risk Factors for Human Disease Emergence’, *356 Philosophical Transactions of the Royal Society B* (2001) 983–989, at 986.

²³ UNEP, ‘Six Nature Facts Related to Coronaviruses’, April 2020, available online at <https://www.unenvironment.org/news-and-stories/story/six-nature-facts-related-coronaviruses> (visited 20 May 2020).

flying foxes — large fruit bats — to horses, and from horses to humans), Lyme disease (passed on to humans by ticks that have fed on the blood of infected animals, including deer) and Lassa fever (spread by *Mastomys* rats).²⁴

Zoonoses, therefore, and the animal–human interface that defines them, powerfully illustrate the core thematic of ecological connectivity. As Hayman and others underline in their work on bat-related zoonoses, ‘the ultimate drivers of spillover [from animals to humans] and emergence are ecological’.²⁵ The process of spillover is also fundamentally ecological in the sense that it often involves multiple systems.²⁶ Demonstrating this in their work on ecological versus conventional approaches to tackling spillover, Sokolow and others argue that ‘[a]n ecological intervention may also target pathogen flow in several layers and systems, not just one’.²⁷ In this regard, pathogenic spillover both reflects and illustrates the interdependencies — and fragilities — of complex ecosystems.

In relation to both COVID-19 and zoonoses more generally, however, ecological connectivity alone does not tell the entire story. This is because the zoonotic relationship between animals and humans is not simply one way. UNEP, for example, notes that:

The Ebola outbreak in West Africa [2014–2016] was the result of forest losses leading to closer contacts between wildlife and human settlements; the emergence of avian influenza [first detected in humans in 1997] was linked to intensive poultry farming; and the Nipah virus [1998–1999] was linked to the intensification of pig farming and fruit production in Malaysia.²⁸

To take a very different example, land clearing for agricultural purposes and urban development in Australia has led to the loss of nectar resources, significantly affecting the flying foxes that feed on the nectar. Their efforts to find alternative food sources²⁹ have brought them closer to urban environments, where they have found a ready supply of food;

²⁴ For a useful overview of zoonoses, see <https://www.who.int/zoonoses/diseases/en/>.

²⁵ D.T.S. Hayman, R.A. Bowen, P.M. Cryan, G.F. McCracken, T.J. O’Shea, A.J. Peel, A. Gilbert, C.T. Webb and J.L.N. Wood, ‘Ecology of Zoonotic Infectious Diseases in Bats: Current Knowledge and Future Directions’, 60 *Zoonoses and Public Health* (2013) 2–21, at 3.

²⁶ J.L.N. Wood, M. Leach, L. Waldman, H. MacGregor, A.R. Fooks, K.E. Jones, O. Restif, D. Dechmann, D.T.S. Hayman, K.S. Baker, A.J. Peel, A.O. Kamins, J. Fahr, Y. Ntiamoa-Baidu, R. Suu-Ire, R.F. Breiman, J.H. Epstein, H.E. Field and A.A. Cunningham, ‘A Framework for the Study of Zoonotic Disease Emergence and Its Drivers: Spillover of Bat Pathogens as a Case Study’, 367 *Philosophical Transactions of the Royal Society B* (2012) 2881–2892, at 2887.

²⁷ S.H. Sokolow, N. Nova, K.M. Pepin, A.J. Peel, J.R.C. Pulliam, K. Manlove, P.C. Cross, D.J. Becker, R.K. Plowright, H. McCallum and G.A. De Leo, ‘Ecological Interventions to Prevent and Manage Zoonotic Pathogen Spillover’, 374 *Philosophical Transactions of the Royal Society B* (2019) 1–10, at 2.

²⁸ UNEP, *supra* note 23.

²⁹ Sokolow et al., *supra* note 27, at 6.

but this — coupled with reduced migratory behaviour³⁰ — has facilitated the transmission of the aforementioned Hendra virus (HeV), which is lethal in both horses and humans. Models elaborated by Plowright and others ‘predict that urban habituation of flying foxes increases the epidemiological linkage between flying foxes and horses, providing plausible scenarios for the recent apparent increased frequency of HeV outbreaks in Australia’.³¹ More broadly, research has shown that bats are highly sensitive to landscape connectivity;³² and it is precisely the loss of connectivity that brings them into areas where there is a higher risk of pathogenic spillover occurring.³³

The key point is that human activities — from deforestation and landscape fragmentation to illegal trafficking of animals³⁴ and intensive farming³⁵ — have created new opportunities for zoonotic diseases, by helping to align the three core elements needed for disease transmission — namely a pathogen, a host and a vector (intermediary). Climate change, much of it human-driven, has also aided zoonotic transmission in a variety of ways.³⁶ UNEP’s Executive Director, Inger Andersen, has thus argued that ‘[n]ever before have so many opportunities existed for pathogens to pass from wild and domestic animals to people’.³⁷

The COVID-19 pandemic has given renewed weight to such concerns, but it is important to note that such arguments in themselves are not new. Indeed, human–nature

³⁰ Plowright et al., *supra* note 19, at 3704.

³¹ *Ibid.*, at 3709.

³² A. Frey-Ehrenbold, F. Bontadina, R. Arlettaz and M.K. Obrist, ‘Landscape Connectivity, Habitat Structure and Activity of Bat Guilds in Farmland-Dominated Matrices’, 50 *Journal of Applied Ecology* (2013) 252–261, at 259.

³³ R.K. Plowright, P. Eby, P.J. Hudson, I.L. Smith, D. Westcott, W.L. Bryden, D. Middleton, P.A. Reid, R.A. McFarlane, G. Martin, G.M. Tabor, L.F. Skerratt, D.L. Anderson, G. Crameri, D. Quammen, D. Jordan, P. Freeman, L.F. Wang, J.H. Epstein, G.A. Marsh, N.Y. Kung and H. McCallum, ‘Ecological Dynamics of Emerging Bat Virus Spillover’, 282 *Proceedings of the Royal Society B* (2014) 1–9, at 4.

³⁴ According to a UNEP report focused on zoonoses, ‘Exact numbers are difficult to come by, but it is estimated that 40,000 live primates, 4 million live birds, 640,000 live reptiles, and 350 million live tropical fish are traded globally each year’. UNEP, *UNEP Frontiers 2016 Report: Emerging Issues of Environmental Concern*, 2016, available at https://environmentlive.unep.org/media/docs/assessments/UNEP_Frontiers_2016_report_emerging_issues_of_environmental_concern.pdf (visited 16 May 2020).

³⁵ In contrast to intensive farming practices, which can fragment landscapes, Worster associates traditional farming practices with ‘carefully integrated, functional mosaics that retained much of the wisdom of nature; they were based on close observation and imitation of the natural order’. D. Worster, ‘Transformations of the Earth: Toward an Agroecological Perspective in History’, 76 *Journal of American History* (1990) 1087–1106, at 1096.

³⁶ See, for example, A. Estrada-Peña, R.S. Ostfield, A. Townsend Peterson, R. Poulin and J. de la Fuente, ‘Effects of Environmental Change on Zoonotic Disease Risk: An Ecological Primer’, 30 *Trends in Parasitology* (2014) 205–214, at 209; D.W. Redding, L.M. Moses, A.A. Cunningham, J. Wood and K.E. Jones, ‘Environmental-Mechanistic Modelling of the Impact of Global Change on Human Zoonotic Disease Emergence: A Case Study of Lassa Fever’, 7 *Methods in Ecology and Evolution* (2016) 646–655, at 652.

³⁷ UNEP, *supra* note 23.

relations have occupied a significant place within feminist and post-humanist literature for more than two decades. Critiquing a 1984 advertisement (‘Understanding is Everything’) by the Gulf Oil Company, for example, Haraway has claimed that the image — showing the hand of English primatologist Jane Goodall holding a chimpanzee’s hand — elevated the white hand as ‘the instrument for saving nature’, while also obliterating ‘the invisible bodies of people of color who have never counted as able to represent humanity in Western iconography’.³⁸ One of her core arguments, thus, is that ‘[w]e must find another relationship to nature besides reification and possession’.³⁹ In clarifying what nature *is not*,⁴⁰ moreover, she has underscored ‘the pleasure of connection of human and other living creatures’.⁴¹

Drawing on Haraway’s work, Asdal maintains that defining something as ‘nature’ risks undermining ‘our co-actor’s power of agency’, thereby raising important questions about who speaks on nature’s behalf.⁴² Like Haraway, she emphasizes that we as humans do not exist above or apart from nature but, rather, we are intrinsically part of it; ‘[w]e become and are persons only as we enter into relationships with things and nature – and more’.⁴³ Görg’s work on ‘societal relationships with nature’, written from a critical theory perspective, similarly underscores that ‘society and nature are constitutively interconnected’.⁴⁴

While this article foregrounds these ecological connections as a central aspect of COVID-19, it also conceptualizes the pandemic — and zoonoses more broadly — as reflecting, in part, a disregard for these connections. Fundamentally, it theorizes human practices that contribute to, and facilitate, zoonotic spillover as violations of ecological connectivity that perpetuate human–nature hierarchies and binaries, thereby detracting from the cardinal principle of Earth Jurisprudence (discussed in the next section) that ‘all components of the environment have value’.⁴⁵ The concept of violations of ecological connectivity, in turn, is pivotal to the linkage that this article makes between COVID-19, international criminal law and transitional justice. As the first step in exploring this linkage,

³⁸ D. Haraway, ‘The Promises of Monsters: A Regenerative Politics for Inappropriate/d Others’, in L. Grossberg, C. Nelson and P.A. Treichler (eds), *Cultural Studies* (Routledge, 1992) 295–336, at 308.

³⁹ *Ibid.*, at 296.

⁴⁰ *Ibid.*

⁴¹ D. Haraway, *Manifestly Haraway* (University of Minnesota Press, 2016), at 5.

⁴² K. Asdal, ‘The Problematic Nature of Nature: The Post-Constructivist to Environmental History’, 42 *History and Theory* (2003) 60–74, at 69.

⁴³ *Ibid.*, at 71.

⁴⁴ C. Görg, ‘Societal Relationships with Nature: A Dialectical Approach to Environmental Politics’ in A. Biro (ed), *Critical Ecologies: The Frankfurt School and Contemporary Environmental Crises* (University of Toronto Press, 2011) 43–72, at 49.

⁴⁵ P.D. Burdon, ‘A Theory of Earth Jurisprudence’, 37 *Australian Journal of Legal Philosophy* (2012) 28–60, at 29.

the next section focuses on legal discussions and developments around the issue of environmental damage, arguing that they constitute an implicit recognition of ecological connectivity. In practice, however, this recognition still remains limited.

3. Ecological Concerns in International Law and Transitional Justice

War, armed conflict, and the crimes committed therein can have significant environmental effects. As Gilman underscores, '[t]here is no such thing as an environmentally friendly war. The simplest act of a modern soldier, shooting a rifle, will cause some environmental degradation because the heavy metal in the bullet will pollute the earth wherever it lands'.⁴⁶ Eckersley, using a concrete example from Iraq, notes that 'The large-scale, government-sponsored drainage of the marsh region [during the 1990s under the rule of the late Saddam Hussein] has been ecologically catastrophic and directly implicated in human rights abuses against the Marsh Arabs'.⁴⁷ This section theorizes environmental harms as both a fundamental expression of ecological connectivity – highlighting 'the dependency of humanity upon its environment'⁴⁸ — and an important legacy dimension of crimes and human rights violations. It explores whether and to what extent international law broadly, and transitional justice in particular, have recognized this ecological connectivity.

Cusato notes that 'the academic debate on a possible role for international criminal law (and, more specifically, the ICC) in advancing the protection of the environment in peace and wartimes has been quite prolific, especially in the last decade or so'.⁴⁹ In contrast, international criminal law to date has given relatively little attention to the issue of environmental protection.⁵⁰ As Leebaw remarks, 'the concept of environmental war crimes is often explicitly or implicitly analyzed in relation to the question of how to weigh the relative

⁴⁶ R. Gilman, 'Expanding Environmental Justice after War: The Need for Universal Jurisdiction over Environmental War Crimes', 22 *Colorado Journal of International Environmental Law and Policy* (2011) 447–472, at 448.

⁴⁷ R. Eckersley, 'Ecological Intervention: Prospects and Limits', 21 *Ethics and International Affairs* (2007): 293–316, at 301.

⁴⁸ L. Proserpi and J. Terrosi, 'Embracing the "Human Factor": Is there New Impetus at the ICC for Conceiving and Prioritizing Intentional Environmental Harms as Crimes against Humanity?' 15 *Journal of International Criminal Justice* (2017) 509–525, at 510.

⁴⁹ E.T. Cusato, 'Beyond Symbolism: Problems Prospects with Prosecuting Environmental Destruction before the ICC', 15 *Journal of International Criminal Justice* (2017) 491–507, at 493.

⁵⁰ T. Weinstein, 'Prosecuting Attacks that Destroy the Environment: Environmental Crimes or Humanitarian Atrocities', 17 *Georgetown International Environmental Law Review* (2005) 697–722, at 699; J.C. Lawrence and K.J. Heller, 'The First Ecocentric Environmental War Crime: The Limits of Article 8(2)(b)(iv) of the Rome Statute', 20 *Georgetown International Environmental Law Review* (2017) 61–96, at 64.

importance of protecting human victims of wartime abuse against the relative importance of preventing or addressing the environmental degradation caused by war'.⁵¹

Following the end of the Second World War, two Nazi generals were tried at the International Military Tribunal in Nuremberg for war crimes linked to scorched earth tactics. One of them, General Alfred Jodl, was found guilty.⁵² The second, General Lothar Rendulic, was acquitted of this charge, after successfully arguing that his actions were based on 'military necessity'.⁵³ Article 6(b) of the Nuremberg Charter defined violations of the laws or customs of war as including 'wanton destruction of cities, towns or villages, or devastation not justified by military necessity'.⁵⁴ As Gilman points out, however, this 'fails to protect unpopulated areas and focuses upon the physical structures of habitation rather than the natural world that surrounds it'.⁵⁵ The precedent established at Nuremberg, therefore, did not extend to liability for war crimes against the natural environment, which were outside the Tribunal's jurisdiction.

During the Vietnam War, Vietnamese forces took advantage of the dense jungle in their fight against a technically more advanced enemy, the United States. The latter, in response, used the powerful herbicide Agent Orange to strip the jungle of its leaves. As Oatsvall notes, '[f]or the United States, using chemical defoliants showed that the U.S. military thought the Vietnamese environment functioned optimally and best served their purpose when razed to the ground'.⁵⁶ This use of chemical defoliants — which resulted in the scientist Arthur Galston coining the term 'ecocide' in 1970⁵⁷ — generated new international momentum around the issue of environmental destruction in warfare, culminating in the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (1976) and Protocol I Additional to the Geneva Conventions (ENMOD) (1977).

⁵¹ B. Leebaw, 'Scorched Earth: Environmental War Crimes and International Justice', 12 *Perspectives on Politics* (2014) 770–788, at 771.

⁵² E. Cetera, 'ATCA: Closing the Gap in Corporate Liability for Environmental War Crimes', 33 *Brooklyn Journal of International Law* (2008) 629–654, at 635, n 40.

⁵³ C. Bruch, 'All's Not Fair in (Civil) War: Criminal Liability for Environmental Damage in Internal Armed Conflict', 21 *Vermont Law Review* (2001) 695–752, at 710 n. 78. Even though the Tribunal found that there was no genuine military necessity for Rendulic's actions, it determined that what mattered was a commander's own subjective (even if erroneous) interpretation of the term. See Leebaw, *supra* note 51, at 774.

⁵⁴ Charter of the International Military Tribunal, August 1945, available at https://www.un.org/en/genocideprevention/documents/atrocities-crimes/Doc.2_Charter%20of%20IMT%201945.pdf (visited 14 April 2020).

⁵⁵ Gilman, *supra* note 46, at 452.

⁵⁶ N.S. Oatsvall, 'Trees Versus Lives: Reckoning Military Success and the Ecological Effects of Chemical Defoliation during the Vietnam War', 19 *Environment and History* (2013) 427–458, at 433.

⁵⁷ *Ibid.*, at 435.

Both agreements represented an important development for environmental protection in warfare. Erdem, for example, maintains that ‘[t]he significance of Additional Protocol I cannot be overstated as one of the first international agreements to contain two specific provisions [articles 35(3) and 55] to provide for direct protection of the environment during international armed conflict’.⁵⁸ A major criticism, however, is that both ENMOD and Protocol I are largely anthropocentric. Lawrence and Heller note apropos of the former that it is ‘only secondarily concerned with protecting the nonhuman environment; its primary goal is to prohibit state parties from harming one another by using destructive environmental modification techniques’.⁵⁹ Regarding Protocol I, they argue that while Article 35(3) ‘is itself genuinely ecocentric’,⁶⁰ Article 55 is ultimately concerned with the impact of environmental damage on human health.⁶¹

Article 8(2)(b)(iv) of the Rome Statute of the ICC specifically acknowledges environmental damage as a war crime, and in this regard it has been described as ‘the first “eco-centric” crime recognized by the international community’.⁶² The significance of this, however, is somewhat diluted by the fact that Article 8(2)(b)(iv) — which only applies to international armed conflict — establishes a very high threshold; damage to the natural environment must be ‘widespread, long-term and severe’.⁶³ Such language, borrowed from ENMOD and Protocol I, is ambiguous, particularly as environmental damage can be extremely difficult to measure and quantify. On this point, Weinstein underlines that ‘environmental damage is hard to assess in terms of severity, and given nature’s ability to heal itself, difficult to measure in terms of longevity’.⁶⁴ In his discussion of the work of the

⁵⁸ M. Erdem, ‘Enforcing Conventional Humanitarian Law for Environmental Damage during Internal Armed Conflict’, 29 *Georgetown Environmental Law Review* (2017) 435–480, at 440.

⁵⁹ Lawrence and Heller, *supra* note 50, at 66.

⁶⁰ *Ibid.*, at 66–67. Article 35(3) states that: ‘It is prohibited to employ methods or means of warfare which are intended, or may be expected, to cause widespread, long-term and severe damage to the natural environment’. Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol I), June 1977, available at <https://ihl-databases.icrc.org/applic/ihl/ihl.nsf/Article.xsp?action=openDocument&documentId=0DF4B935977689E8C12563CD0051DAE4> (visited 3 May 2020).

⁶¹ Lawrence and Heller, *supra* note 50, at 67. Article 55(1) specifies that ‘Care shall be taken in warfare to protect the natural environment against widespread, long-term and severe damage. This protection includes a prohibition of the use of methods or means of warfare which are intended or may be expected to cause such damage to the natural environment and thereby to prejudice the health or survival of the population’. Protocol Additional, *Ibid.*, available at <https://ihl-databases.icrc.org/applic/ihl/ihl.nsf/Article.xsp?action=openDocument&documentId=E20CAD5E1C078E94C12563CD0051DD24> (accessed 3 May 2020).

⁶² Gilman, *supra* note 46, at 453.

⁶³ Rome Statute of the International Criminal Court, July 1998, available at <https://www.icc-cpi.int/resource-library/documents/rs-eng.pdf> (visited 30 May 2020).

⁶⁴ Weinstein, *supra* note 50, at 708.

UN Commission of Inquiry on Lebanon (2006), which looked, inter alia, at environmental damage caused by Israeli forces, Stewart comments that ‘experts agree that long-term damage is to be measured in “decades not months”’.⁶⁵

Lack of clarity within the Rome Statute in relation to the *actus reus* of the crime, moreover, exists alongside a very narrowly-defined *mens rea*; a defendant is required to know that his or her behaviour ‘will cause “widespread, long-term and severe” damage to the environment’.⁶⁶ Furthermore, the requirement that any damage to the environment must be ‘clearly excessive in relation to the concrete and direct overall military advantage anticipated’⁶⁷ places another heavy burden on the prosecution,⁶⁸ particularly as the Statute does not define ‘clearly excessive’.⁶⁹ One of the key criticisms of such thresholds, therefore, is that they ‘seem virtually guaranteed to absolve militaries of responsibility for environmental devastation’.⁷⁰

Concerns that existing laws do not go far enough have led, inter alia, to demands for more radical changes aimed at reversing the subordination of the environment to anthropocentric priorities/needs and promoting ‘the reality that we exist as subjects who must rely upon an environment that does not need us as much as we need it’.⁷¹ Earth Jurisprudence is an important example that both reflects and illustrates these demands.

Earth Jurisprudence (also referred to as Wild Law) is a developing branch of legal philosophy in response to perceived environmental and ecological deficits within the field of law in general. Originating in the work of the late Thomas Berry, a cultural historian who insisted that ‘[a] legal system exclusively for humans is not realistic’,⁷² Earth Jurisprudence embraces a holistic view of the world in which human beings exist as part of a broader whole. The implication of this is that ‘human societies will only be viable and flourish if they regulate themselves as part of this wider Earth community and do so in a way that is

⁶⁵ J.G. Stewart, ‘The UN Commission of Inquiry on Lebanon: A Legal Appraisal’, 5 *Journal of International Criminal Justice* (2016) 1039–1059.

⁶⁶ M.A. Drumbl, ‘Waging War against the World: The Need to Move from War Crimes to Environmental Crimes’, 22 *Fordham International Law Journal* (1998) 122–153, at 130.

⁶⁷ Rome Statute, *supra* note 63, at Art. 8(2)(b)(iv).

⁶⁸ R. Reyhani, ‘Protection of the Environment during Armed Conflict’, 14 *Missouri Environmental Law and Policy Review* (2006) 323–338, at 337.

⁶⁹ Cetera, *supra* note 52, at 636.

⁷⁰ Leebaw, *supra* note 51, at 781.

⁷¹ A. Burke, S. Fishel, A. Mitchell, S. Dalby and D.J. Levine, ‘Planet Politics: A Manifesto from the End of IR’, 44 *Millennium: Journal of International Studies* (2015) 499–523, at 521.

⁷² T. Berry, *The Great Work: Our Way Into the Future* (Bell Tower, 1999) 161.

consistent with the fundamental laws or principles that govern how the Universe functions'.⁷³ From this perspective, therefore, the environments with which our own individual wellbeing is integrally intertwined can be viewed as 'wider global life-support systems'.⁷⁴

The central ecological connectivity thematic within Earth Jurisprudence means that it strongly eschews dualistic thinking about the world, including the binary construction of subject and object that assigns value to '[s]ubjects (those like me)' and assigns an 'other' label to everything else.⁷⁵ Similar to Haraway's arguments about the 'othering' of nature,⁷⁶ Koons maintains that '[t]he consequences of a worldview based on dualistic thinking are tragically apparent in the separation of humanity from Earth and the grotesque overuse of the goods of Earth to support consumptive lifestyles. Dualistic thinking creates and reinforces humanity's disassociation from Nature'.⁷⁷ The existence of zoonoses like COVID-19, as this article has argued, are a powerful reminder of the porosity of nature–human binaries and of the core interdependencies that quintessentially bind the two together. In Koons' eloquent words, 'the functioning of the universe is not reflected in hierarchy or separation, but in a circling dance of spheres, orbits, and rotations'.⁷⁸

Notwithstanding the poignancy of such arguments, they also have a distinct chimeric quality in a world that, quintessentially, remains dominated by power politics and self-interest. Harrop, for example, remarks that 'few politicians are concerned with deep ecological ideals that may only bear fruit long after their terms of office have expired'.⁷⁹ Highlighting the governance elements of Earth Jurisprudence, the concept of 'Earth Democracy' — according to which 'our primary identities come from the earth, from a sense of place, of rootedness, of limits of sharing within those limits'⁸⁰ — raises similar viability issues. In theory, at least, 'Earth democracy enables us to transcend the polarisation, divisions and exclusions that place the economy against ecology, development against environment

⁷³ C. Cullinan, 'A History of Wild Law', in P. Burdon (ed), *Exploring Wild Law: The Philosophy of Earth Jurisprudence* (Wakefield Press, 2012) 12–23, at 13.

⁷⁴ S. Harrop, 'Holistic and Leadership Approaches to International Regulation: Confronting Nature Conservation and Developmental Challenges – A Reply to Farnese', 3 *Transnational Environmental Law* (2011) 311–320, at 316.

⁷⁵ J.E. Koons, 'Key Principles to Transform Law for the Health of the Planet', in P. Burdon (ed), *Exploring Wild Law: The Philosophy of Earth Jurisprudence* (Wakefield Press, 2012) 45–58, at 48.

⁷⁶ Haraway, *supra* note 38, at 296.

⁷⁷ Koons, *supra* note 75, at 50–51.

⁷⁸ *Ibid*, at 52.

⁷⁹ Harrop, *supra* note 74, at 313.

⁸⁰ V. Shiva, 'Earth Democracy: Creating Living Economies, Living Democracies, Living Cultures', 2 *South Asian Popular Culture* (2004) 5–18, at 11.

and people against the planet and against one another in a new culture of hate'.⁸¹ Yet, the very existence of polarisation, divisions and exclusions critically restricts the scope for developing Earth democracy in practice. In South Africa, for example, Witt and Loots argue that 'The new economic and political elites have been adept at linking any environmental discourse that threatens unfettered capitalist accumulation as a continuation of "apartheid" and the denial of development opportunities for "our people"'.⁸²

Without going as far as calling for a major reconfiguring of laws and legal systems to ensure equal respect for all elements within the Earth community,⁸³ some scholars have underlined the importance of giving greater attention to wider environmental and ecological issues in the context of post-conflict and transitioning societies. Writing from the perspective of environmental peacebuilding, for example, Dresse et al. argue that '[a]cknowledging the interdependency created by the biophysical environment, environmental issues represent an opportunity to stimulate positive interactions by creating alternative, neutral spaces where conflict parties can exchange on shared values and break down mutual stereotypes'.⁸⁴ Milburn invokes the term 'ecological development'. According to him, this entails 'using the management and development of environmental biodiversity to prevent the outbreak of conflict, promote peacebuilding and thereby help to end armed conflict' – and, in so doing, to foster long-term reconciliation and development.⁸⁵ The crucial point is that while environmental issues can be a source of conflict, they can also reflect 'the dynamics of co-existing conflict and cooperation'.⁸⁶ For their part, Fernández-Manjarrés and others focus on what they term 'social-ecological restoration', as an example of a bottom-up approach to peacebuilding that prioritizes local voices and concerns. They maintain that '[a]fter a crisis, chances are that the affected society will very quickly point out what essential components of

⁸¹ *Ibid.*

⁸² H. Witt and L. Loots, 'Seeking Earth Democracy: The Relationship of Gender, the Environment and Activisms in South Africa', 18 *Agenda* (2004) 4–15, at 10.

⁸³ See, for example, P.J. Burdon, 'Earth Jurisprudence and the Project of Earth Democracy', in M. Maloney and P. Burdon (eds), *Wild Law – In Practice* (Routledge, 2014) 19–30, at 19.

⁸⁴ A. Dresse, I. Fischhendler, J. Østergaard Nielsen and D. Zikos, 'Environmental Peacebuilding: Towards a Theoretical Framework', 51 *Cooperation and Conflict* (2019) 99–119, at 110.

⁸⁵ R. Milburn, 'Mainstreaming the Environment into Postwar Recovery: The Case for "Ecological Development"', 88 *International Affairs* (2012) 1083–1100, at 1084.

⁸⁶ N. Mirumachi and J.A. Allan, 'Revisiting Transboundary Water Governance: Power, Conflict, Cooperation and the Political Economy', Proceedings from CAIWA International Conference on Adaptive and Integrated Water Management: Coping with Scarcity', November 2007, available at <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.490.9078&rep=rep1&type=pdf> (visited 9 June 2020).

the ecosystem are lacking and what processes have been disrupted that they deem necessary to return back to their normal lives ...'.⁸⁷

Such arguments are particularly pertinent to transitional justice, the core goals of which include peace and reconciliation. Despite this, the 'greening' that has been seen in other fields — including criminology⁸⁸ and criminal law⁸⁹ — has been largely absent from transitional justice,⁹⁰ and the field has given little attention to ecological connectivity in the sense of environmental issues and human–nature relations. Bradley's work on natural disasters is one of the exceptions. Her focus is not on damage done to the environment per se. However, she underlines that 'in many disasters, environmental phenomena outside human control intermingle with harms caused directly and indirectly by humans, such as relegating marginalized groups to live in high-risk areas, denying or preferentially distributing lifesaving aid, and refusing to allow or help uprooted people to return and rebuild their homes'.⁹¹ In other words, the environment itself can cause or exacerbate harm and this, according to Bradley, is a core reason why natural disasters should fall within the remit of transitional justice.

More generally, Laplante's work in Peru notes that environmental pollution can fuel socio-economic grievances in transitional societies;⁹² Duthie argues that reparations could address environmental harms;⁹³ Humphries explores the impact of climate change on human rights protection;⁹⁴ and Klinsky and Brankovic use transitional justice 'as a lens that allows us to see climate conflicts in a new way and identify options for moving forward that might otherwise be left unexplored'.⁹⁵ This article adds a new dimension to this body of work. If, as this section has demonstrated, there is limited acknowledgement of ecological connectivity within the fields of international law and transitional justice, the final section seeks to address

⁸⁷ J.F. Fernández-Manjarrés, S. Roturier and A.G. Bilhaut, 'The Emergence of the Social-Ecological Restoration Concept', 26 *Restoration Ecology* (2018) 404–410, at 405.

⁸⁸ M.J. Lynch and P.B. Stretesky, *Exploring Green Criminology: Toward a Green Criminological Revolution* (Ashgate Publishing Ltd., 2014).

⁸⁹ R. White and H. Graham, 'Greening Justice: Examining the Interfaces of Criminal, Social and Ecological Justice', 55 *British Journal of Criminology* (2015) 845–865.

⁹⁰ J.N. Clark, 'Are there "Greener" Ways of Doing Transitional Justice? Some Reflections on Srebrenica, Nature and Memorialisation', 20 *International Journal of Human Rights* (2016) 1199–1218.

⁹¹ M. Bradley, 'More than Misfortune: Recognizing Natural Disasters as a Concern for Transitional Justice', 11 *International Journal of Transitional Justice* (2017) 400–420, at 402.

⁹² L.J. Laplante, 'Transitional Justice and Peace Building: Diagnosing and Addressing the Socioeconomic Roots of Violence through a Human Rights Framework', 2 *International Journal of Transitional Justice* (2008) 331–355, at 332.

⁹³ R. Duthie, 'Toward a Development-Sensitive Approach to Transitional Justice', 2 *International Journal of Transitional Justice* (2008) 292–309, at 302.

⁹⁴ S. Humphries (ed), *Human Rights and Climate Change* (Cambridge University Press, 2010).

⁹⁵ S. Klinsky and J. Brankovic, *The Global Climate Regime and Transitional Justice* (Routledge, 2018), at 3.

this through a novel conceptual reframing of war crimes and human rights violations that centralizes the idea of ecological connectivity.

4. International Criminal Law, Transitional Justice and Violations of Ecological Connectivity

Some scholars have underscored that the COVID-19 pandemic accentuates and reinforces structural inequalities that highlight deeply entrenched injustices.⁹⁶ Writing specifically about the relevance of the pandemic for international criminal law and justice, Guariglia stresses that epidemics and international crimes can fuel each other by feeding from ‘the same toxic elements’⁹⁷ — including lack of basic services and systemic poverty. According to him, therefore, ‘international justice can and should be one piece of a much more comprehensive response, one that tackles the actions of war criminals and their damaging consequences, as well as the chronic underlying factors that have contributed to a world much less secure ...’.⁹⁸ He thus points to a systemic linkage between the effects of the pandemic and the commission (and legacies) of crimes committed in breach of international law.

This article situates both the pandemic and the commission of war crimes and human rights abuses in the systemic context of ‘the heterogeneous collectives that humans co-constitute with diverse nonhuman beings’.⁹⁹ It specifically links them through the core concept of ecological connectivity. Wang observes that ‘[a]cross history, human beings have survived many pandemics, and this one [COVID-19] should remind us, both at the micro level of individual life and the macro level of world order, of the importance of interdependence, of taking on this challenge together in this changing world’.¹⁰⁰ While supporting this argument, this article focuses on ruptured interdependence. The first section theorized the COVID-19 pandemic as both illustrating ecological connectivity and reflecting

⁹⁶ See, for example, L. Bowleg, ‘We’re Not All in This Together: On COVID-19, Intersectionality and Structural Inequality’, 110 *American Journal of Public Health* (2020): at 917; T. Power, D. Wilson, O. Best, T. Brockie, L. Bourque Bearskin, E. Millender and J. Lowe, ‘COVID-19 and Indigenous Peoples: An Imperative for Actions’, 29 *Journal of Clinical Nursing* (2020) 2737–2741, at 2737.

⁹⁷ F. Guariglia, ‘COVID-19 Symposium: COVID-19 and International Criminal Law’, April 2020, available at <http://opiniojuris.org/2020/04/04/COVID-19-symposium-COVID-19-and-international-criminal-law/> (visited 10 April 2020).

⁹⁸ *Ibid.* Some critical transitional justice scholars have voiced similar arguments, accentuating the need for transitional justice processes to address broader structural harms and violence. See, for example, M. Mullen, ‘Reassessing the Focus of Transitional Justice: The Need to Move Structural and Cultural Violence to the Centre’, 28 *Cambridge Review of International Affairs* (2015) 462–479; E.G. Murdock, ‘Storied with Land: “Transitional Justice” on Indigenous Lands’, 14 *Journal of Global Ethics* (2018) 232–239; H.O. Yusuf, ‘Colonialism and the Dilemmas of Transitional Justice in Nigeria’, 12 *International Journal of Transitional Justice* (2018) 257–276.

⁹⁹ A. Mitchell, ‘Only Human? A Worldly Approach to Security’, 45 *Security Dialogue* (2014) 5–21, at 5.

¹⁰⁰ Wang, *supra* note 12.

violations of ecological connectivity, in the sense of an anthropocentric disregard for human–nature inter-relations. This final section extends the concept in a different direction, using it (and, by extension, the pandemic) to build on some of the developments and arguments discussed in the previous section, while also offering a new conceptual framework. The article’s core proposition is that the human rights abuses and crimes that come to the attention of international criminal law and transitional justice themselves constitute, in part, violations of ecological connectivity. This section begins by outlining two dimensions of this argument.

Turning to the first of these, Prosperi and Terrosi note that ‘[b]reaking the link between indigenous peoples and their land and ecosystem might threaten their enduring integrity as a group, as well as their ability to ensure their heritage — not only their ancestral territories, but also their ethnic identity — is passed to future generations’.¹⁰¹ Such a breakage constitutes a powerful *stricto sensu* illustration of violated ecological connectivity. In a very different context, the forced displacement of the Chiadzwa people in Zimbabwe, in 2006, and the resulting dispersion of families effected a breakage that had significant consequences for social relations and livelihoods.¹⁰² For example, ‘[v]illagers had an intimate experiential knowledge of their established natural and social environment in Chiadzwa, which was crucial in supporting their livelihoods. The relocation cut them off from the environmental resources on which they relied for livelihoods’.¹⁰³ In other words, one aspect of violations of ecological connectivity is the rupturing of connectivity between individuals/groups and the environments that help to sustain them, including culturally and economically.

However, violations of ecological connectivity can also be theorized *sensu lato*. Bronfenbrenner’s classic work on social ecology, for example, frames the ecological environment as a matrix of intersecting systems, ‘a nested set of structures, each contained within the next’.¹⁰⁴ Individuals subjected to crimes and human rights abuses live their lives in interaction with various systems and structures — including families, communities, local institutions and states — that together constitute broad social ecologies. The crucial point is that crimes and abuses can violate the quintessential connectivities within these ecologies, in the sense of altering, rupturing, or damaging them.

¹⁰¹ Prosperi and Terrosi, *supra* note 48, at 522.

¹⁰² S. Gukurume and L. Nhodo, ‘Forced Displacements in Mining Communities: Politics in Chiadzwa Diamond Area, Zimbabwe’, 38 *Journal of Contemporary African Studies* (2020) 39–54, at 43.

¹⁰³ *Ibid.*, at 44.

¹⁰⁴ U. Bronfenbrenner, ‘Toward an Experimental Ecology of Human Development’, 32 *American Psychologist* (1977) 513–531, at 514.

Conflict-related sexual violence, for example, can lead to female and male victims-survivors being stigmatized within their communities and rejected by family members,¹⁰⁵ and the wilful killing of a spouse can critically affect a woman's relationship with different social systems. In Uganda, as one illustration, '[t]he clan as a semi-autonomous social field meddles with women's rights of succession to property whenever it exerts pressure on the widow to accept the clan's distribution schemes of property lest the relatives of the deceased cease to interact and support her and the children'.¹⁰⁶ More broadly, when people are no longer able to interact with their ecologies in the same way that they could pre-war, due, for example, to the presence of landmines, war-related river pollution or changes in fish abundance, this can significantly disrupt 'broader socioecological relations'¹⁰⁷ and relational connectivity across ecological systems, with wider implications for peacebuilding. Glaser and others, for example, explored the relationship between the civil war in Uganda (fought between government forces and the Lord's Resistance Army, or LRA) and fisheries in the Lake Victoria basin. They found that internal displacement caused by the war led to increased fishing in the Lake and a concomitant decline in Nile perch, which, in turn, had wider consequences; '[r]eciprocally, the depressed Nile perch catches fed back into the human system, leading to increased competition for resources and distributive conflict'.¹⁰⁸ Declining catches also contributed to conflict between Uganda and Kenya over Migingo, a small island located close to the Ugandan–Kenyan border in Lake Victoria.¹⁰⁹ The authors thus underline that '[t]he drivers of fishing effort and catch originate in different subsystems, but their changes and effects must be analyzed in concert'.¹¹⁰

All of the above examples illustrate how crimes and abuses that violate laws and rights can also violate 'the myriad daily interactions that form the web of our social lives'¹¹¹ — and, thus, ecological connectivity. Scholars have extensively explored the concept of

¹⁰⁵ See, for example, K. Albutt, J. Kelly, J. Kabanga and M. VanRooyen, 'Stigmatisation and Rejection of Survivors of Sexual Violence in Eastern Democratic Republic of the Congo', 41 *Disasters* (2017) 211–227.

¹⁰⁶ A.L. Kafumbe, 'Women's Rights to Property in Marriage, Divorce and Widowhood in Uganda: The Problematic Aspects', 11 *Human Rights Review* (2010) 199–221, at 212.

¹⁰⁷ J.D. Unruh, N.C. Heynen and P. Hossler, 'The Political Ecology of Recovery from Armed Conflict: The Case of Landmines in Mozambique', 22 *Political Geography* (2003) 841–861, at 842.

¹⁰⁸ S.M. Glaser, C.S. Hendrix, B. Franck, K. Wedig and L. Kaufman, 'Armed Conflict and Fisheries in the Lake Victoria Basin', 24 *Ecology and Society* (2019), available at <https://www.ecologyandsociety.org/vol24/iss1/art25/> (visited 18 October 2020).

¹⁰⁹ *Ibid.*

¹¹⁰ *Ibid.*

¹¹¹ T. Todorov (translated by Arthur Denner), 'Torture in the Algerian War', 24 *South Central Review* (2007) 18–26, at 24.

ecological connectivity in relation, inter alia, to urban areas,¹¹² aquatic eco-systems,¹¹³ and forestry.¹¹⁴ In contrast, it has not been explicitly discussed in a legal or transitional justice context. Nevertheless, transitional justice arguably does have a significant connectivity dimensions. Some of its core goals, for example, such as reconciliation and peace, are quintessentially about the restoration of lost social connections in communities and societies emerging from conflict. Institutional reforms and lustration can be viewed, in part, as connectivity efforts aimed at repairing trust in the state and its organs; and reparations can be conceptualized as a way of re-connecting people with what is rightfully theirs (for example, through land restitution) and of creating tangible connections between communities and their past (for example, through memorials). Reparative justice can also draw attention to unexplored connectivities that locate contemporary injustices in a broader historical context;¹¹⁵ and it can potentially mitigate the risk of further broken connectivities through the recognition that ‘The harm committed to individuals has communal consequences that are equally in need of reparation’.¹¹⁶

In relation to international criminal law, moreover, the growth of international and hybrid tribunals and the principle of universal jurisdiction — whereby ‘a state acts on behalf of the international community’¹¹⁷ — partly reflect globalization and ‘the interconnectivity between local and global domains as well as the linkage between domestic and international matters’.¹¹⁸ Indeed, the Preamble to the Rome Statute of the ICC itself speaks to the meta connectivities that unite diverse peoples and cultures.¹¹⁹

The theorization of war crimes and human rights abuses as constituting, in part, violations of ecological connectivity situates these various ‘connectivity corridors’¹²⁰ within a

¹¹² S. LaPoint, N. Balkenhol, J. Hale, J. Sadler and R. van der Ree, ‘Ecological Connectivity Research in Urban Areas’, 29 *Functional Ecology* (2015) 868–878.

¹¹³ S.R. Januchowski-Hartley, P.B. McIntyre, M. Diebel, P.J. Doran, D.M. Infante, C. Joseph and J.D. Allan, ‘Restoring Aquatic Ecosystem Connectivity Requires Expanding Inventories of both Dams and Road Crossings’, 11 *Frontiers in Ecology and the Environment* (2013) 211–217.

¹¹⁴ M.L. Lancaster, A.C. Taylor, S.J.B. Cooper and S.M. Carthew, ‘Limited Ecological Connectivity of an Arboreal Marsupial across a Forest/Plantation Landscape despite Apparent Resilience to Fragmentation’, 20 *Molecular Ecology* (2011) 2258–2271.

¹¹⁵ C. Murdocca, ‘Persistence and Memorialization: Self-Harm and Suicide in Reparation Politics in Canada’, 38 *Australian Feminist Law Journal* (2013) 93–107, at 97.

¹¹⁶ L.M. Balasco, ‘Reparative Development: Re-conceptualising Reparations in Transitional Justice Processes’, 17 *Conflict, Security and Development* (2017) 1–20, at 2.

¹¹⁷ M.C. Bassiouni, ‘Universal Jurisdiction for International Crimes: Historical Perspectives and Contemporary Practice’, 42 *Virginia Journal of International Law* (2001): 81–162, at 88.

¹¹⁸ M. Sterio, ‘The Evolution of International Law’, 31 *Boston College International and Comparative Law Review* (2008) 213–256, at 236.

¹¹⁹ Rome Statute, *supra* note 63.

¹²⁰ Carina Wyborn, ‘Landscape Scale Ecological Connectivity: Australian Survey and Rehearsals’, 17 *Pacific Conservation Biology* (2011): 121–131, at 121.

broader ecological frame, which, in turn, raises important questions about the potential role of international criminal law and transitional justice in helping to restore broken and damaged connectivities. In this regard, post-conflict and transitioning societies can themselves be likened to entire ecosystems, consisting of complex webs of ‘social and ecological processes and interactions’.¹²¹

Returning to the aforementioned *stricto sensu* meaning of violations of ecological connectivity, one potential way of addressing these and of restoring lost connectivity is to incorporate nature and the environment into processes of dealing with the past.¹²² Langhorst, for example, writes about a post-industrial site called Landschaftspark Duisburg-Nord (Landscape Park Duisburg-North) in the Ruhrgebiet area of Germany. After the plant closed in 1985, the area subsequently became the focus of a regeneration project and a final design was chosen in 1992. Part of the project’s distinctiveness lies in the blending and fusion of human and non-human processes. As Langhorst comments, ‘Landschaftspark Duisburg-Nord preferences neither human acts of civilisation and ordering nor the non-human processes bent on imposing their own order. The presence, entanglement and co-authorship of both human and non-human process is as integral as it is visible, and makes the park a quintessential opportunity to explore and experience post-industrial landscape as *simultaneous ruins of culture and nature*’.¹²³ Ultimately, therefore, the design has created a ‘complex mosaic of different conditions’, highlighting and enabling the ecological connectivity of human and non-human systems in a way that privileges neither one nor the other.¹²⁴

Translating this idea directly to international criminal law and transitional justice, as a starting point it is important that individuals and communities are given the opportunity to speak about what a witness in the *Ongwen* trial at the ICC described as ‘ecological trauma’.¹²⁵ This refers to the trauma that people may experience when the environment around them is burned, razed and destroyed. In this regard, ecological trauma can include the destruction of cultural heritage. In the ICC’s 2016 *Al Mahdi* judgment, for example, which addressed attacks on cultural heritage in Mali, Trial Chamber VIII of the ICC noted that one

¹²¹ N.C. Ban, M. Milla, J. Tam, C.C. Hicks, S. Klain, N. Stoeckl, M.C. Bottrill, J. Levine, R.L. Pressey, T. Satterfield and K.M.A. Chan, ‘A Social–Ecological Approach to Conservation Planning: Embedding Social Considerations’, 11 *Frontiers in Ecology and the Environment* (2013) 194–202, at 199.

¹²² See, for example, Clark, *supra* note 90.

¹²³ Emphasis in the original. J. Langhorst, ‘Re-Presenting Transgressive Ecologies: Post-Industrial Sites as Contested Terrains’, 19 *Local Environment: The International Journal of Justice and Sustainability* (2014) 1110–1133, at 1117.

¹²⁴ *Ibid.*, at 1119.

¹²⁵ Open Session, *Ongwen* (ICC-02/04-01/15), 23 May 2018, at 81, available online at https://www.icc-cpi.int/Transcripts/CR2018_02682.PDF (visited 15 July 2020).

particular witness ‘testified that destroying the mausoleums, to which the people of Timbuktu had an emotional attachment, was a war activity aimed at breaking the soul of the people of Timbuktu’.¹²⁶ Such examples draw attention to wider ecological legacies of warfare and armed conflict, consistent with some of the core concerns of Earth Jurisprudence discussed in the previous section.

More broadly, there is significant unexplored potential in harnessing nature and the environment in often highly contentious processes of dealing with the past. Memorials offer a poignant illustration as they are rarely apolitical and often reflect wider interests and agendas. In post-genocide Rwanda, for example, ‘contemporary memorialization is shaped by international actors’.¹²⁷ In Northern Ireland, ‘the commemoration and memorialization of the conflict reproduces and rewrites a complex of stories about the past to negotiate the political dynamics of the present’.¹²⁸ In communities and societies that remain highly polarized, moreover, memorials can contribute to further entrenching divisions and revisionism.¹²⁹ In this regard, ecological connectivity in the form of essentially hybridized memorials – or what Langhorst terms ‘new and hybrid socio-ecological assemblages’¹³⁰ — that capture the merging of human and non-human processes, as seen in the aforementioned Landschaftspark Duisburg-Nord, could help to counter the political co-opting of the past.

Relatedly, and reflecting the fact that ‘[b]oth human and the non-human have a capacity to invoke (re)productions of memory and identity, individually, and collectively’,¹³¹ the operationalization of ecological connectivity could also contribute to the ‘authenticity’ of memorials that are ultimately more respectful of the dead. Writing about the site of the former Birkenau death camp in Poland, Charlesworth and Addis maintain that ‘[u]niform lawns are more likely to let us regard the victims as the authorities did, as “Figuren”, objects, a mass. This mask of anonymity placed on the victims is already there in the guidebooks,

¹²⁶ Judgment, *Al Mahdi* (ICC-01/12-01/15), Trial Chamber, 27 September 2016, at § 80.

¹²⁷ R. Ibreck, ‘International Constructions of National Memories: The Aims and Effects of Foreign Donors’ Support for Genocide Remembrance in Rwanda’, 7 *Journal of Intervention and Statebuilding* (2013) 149–169, at 150.

¹²⁸ R.L. Graff-McCrae, ‘Ghosts of Gender: Memory, Legacy and Spectrality in Northern Ireland’s Post-Conflict Commemorative Politics’, 16 *Ethnopolitics* (2017) 500–518, at 503–504.

¹²⁹ J.N. Clark, ‘Reconciliation through Remembrance? War Memorials and the Victims of Vukovar’, 7 *International Journal of Transitional Justice* (2013) 116–135.

¹³⁰ Langhorst, ‘Re-presenting Transgressive Ecologies’, *supra* note 121, at 119.

¹³¹ D. Drozdowski, S. De Nardi and E. Waterton, ‘Geographies of Memory, Place and Identity: Intersections in Remembering War and Conflict’, 10 *Geography Compass* (2016) 447–456, at 452.

which quote statistics of death rather than stories of individuals' fates, thus distancing them from us'.¹³²

The theorization of war crimes and human rights abuses as violating ecological connectivity also has important reparative implications. Discussing a Remembrance Woodland in San Martin in the department of Meta in Colombia, for example, Nail notes that 'the trees have ... been planted by the community as a reminder that people have not been the only victims of the Colombian conflict: the native flora and fauna have also been sacrificed, in this case to the oil-producing activity in the area'.¹³³ In this regard, reparations should include the repair of harm done not only to individuals and communities but also, by extension, to the environment itself. At the Bastøy prison in Norway, for example, which has been described as the world's first 'eco-prison',¹³⁴ the prisoners 'are engaged in animal husbandry, sustainable farming and food production, recycling, renewable energy use and carbon emission reductions ...'.¹³⁵ While Norway is not a transitional society, the case of Bastøy prison points to one way in which the concept of reparations might be ecologically reframed. Contributing to this debate, Killean has discussed potential ways of 'greening' reparations for environmental destruction, specifically in the context of the ICC's mandate. She emphasizes, *inter alia*, the importance of an 'eco-sensitive approach' to reparations that acknowledges 'the interconnections between humans and their environment, and the need to ensure projects do not have unintentionally harmful results in the future due to their environmental impacts'.¹³⁶

Consistent with the article's second — and broader — interpretation of violations of ecological connectivity, addressing these violations is not only about the restoration and repair of human–environment connectivities. It is also about giving more attention to the wider social ecologies that shape and inform individual lives, choices and needs. Potential resources — such as families, communities and cultural traditions — can exist within these ecologies that help people to deal with their experiences of trauma and suffering and to find strength. Equally, these same ecologies can include significant stressors — such as nationalism, denial and security issues — that may critically impede individual recovery and undermine core transitional justice objectives, such as peace and non-repetition. The fact that

¹³² A. Charlesworth and M. Addis, 'Memorialization and the Ecological Landscapes of Holocaust Sites: The Cases of Plaszow and Auschwitz-Birkenau', 27 *Landscape Research* (2002) 229–251, at 246.

¹³³ S. Nail, 'Memory and Resilience: A Two-Pronged Approach to Natural Spaces in Colombia's Transition to a Peaceful Society', 31 *Urban Forestry and Urban Greening* (2018) 48–55, at 51.

¹³⁴ White and Graham, *supra* note 89, at 854.

¹³⁵ *Ibid.*

¹³⁶ Killean, *supra* note 14, at 11.

international criminal law and transitional justice focus heavily on individuals, or groups of individuals — a key point to which this section will return — means that discussions around core concepts such as justice, peace and reconciliation can marginalize critical ecological dimensions of these processes. If, for example, social attitudes supportive of stigma are left unaddressed, any ‘justice’ for men and women who have endured conflict-related sexual violence will remain incomplete.¹³⁷ Similarly, the neglect of multiple relational ruptures across entire ecologies – including with community, with institutions, with livelihood opportunities and life projects – as legacies of war crimes and human rights violations may compromise peace and reconciliation efforts. In the context of conservation biology, the goal of reconciliation ecology is ‘to reconcile human needs with those of native species by designing our surroundings in ways that will also meet their habitat requirements’.¹³⁸ Transposed to the context of transitional and post-conflict societies, the concept underscores the importance of approaching peace and reconciliation as complex social ecological processes.

The article began by discussing zoonoses. Conventional approaches to tackling zoonotic spillover include the culling of the reservoir host. The economic fallout and impact on people’s livelihoods, however, can be considerable. Ecological approaches look at the wider picture. An example from the 1998–1999 outbreak of Nipah virus in Malaysia illustrates this. One of the successful ecological measures put in place to minimize transmission of the virus from bats to pigs was the introduction of policies ‘that required fruit trees, which attract bats and were implicated as the pathway for multiple spillover events on the outbreak’s index farm, to be planted a minimum distance from pig sties’.¹³⁹ In relation to international criminal law and transitional justice, the key point is that war crimes and human rights abuses necessarily ‘spill over’ into the complex ecologies – including social and relational ecologies – with which individual lives are embedded and inter-connected. Ultimately, giving insufficient attention to these ecologies within the design and operationalization of processes aimed at rendering justice, dealing with the past and addressing victims’ needs is analogous to seeking solutions that neglect the surrounding ‘fruit trees’ and their positioning.

¹³⁷ J.N. Clark, ‘Transitional Justice, Education and Sexual Violence Stigma: The Results of a Schools-Based Study in Bosnia-Herzegovina’, 45 *Journal of Law and Society* (2018) 509–537.

¹³⁸ J.R. Miller, ‘Restoration, Reconciliation and Reconnecting with Nature Nearby’, 127 *Biological Conservation* (2006) 356–361, at 359.

¹³⁹ Sokolow et al., *supra* note 27, at 2.

This article's proposed theorization of war crimes and human rights abuses as violations of ecological connectivity — in the two senses discussed in this section — underscores a broader set of harms, and specifically relational harms. In her discussion of genocidal rape in Darfur, Miller identifies three forms of relational harm. She argues:

First, the meaning of harm is often relationally constituted. It is rare that the meaning of a person's harm is exclusively self-constituted, as interactions we have with others give rise to intersubjective interpretations of the harms we experience, thus molding their meaning relationally...Second, harms that others inflict on us as individuals can negatively affect our relationships. Although the violence we suffer may not directly harm our loved ones, such violations can damage our relationships with them...Finally, relational harm can take the form of a harm an individual initially sustains that then reverberates throughout their community. The harm can destabilize the identities and meanings that constitute a community, thereby greatly undermining the overall cohesion of that community.¹⁴⁰

This article has primarily emphasized the second and third types of harm, while also exploring a fourth — namely, harms done to wider ecosystemic relations — to underline that '[h]arms caused by violence and destruction do not accrue to humans alone. Rather, they are distributed across unique, irreducible worlds that are co-constituted by diverse forms of being'.¹⁴¹ Its purpose is not in any way to detract from harms done to individuals per se. By underlining that individuals are relational subjects 'located within webs of relationships',¹⁴² it seeks to tell a more complex story of multi-layered harms. This necessarily has wider implications for international criminal law and transitional justice, which, as previously noted, primarily focus on harms done to individuals and to groups.

This section has placed a strong accent on the 'the reparation of disconnections',¹⁴³ discussing a number of potential ways of addressing ruptures of ecological connectivity — both narrowly and broadly defined — through transitional justice and legal processes. However, it is fully acknowledged that the concept of relational harm potentially raises a number of crucial questions, particularly in the context international criminal law. For example, how would relational harms be prosecuted? What would be the legal basis for doing

¹⁴⁰ S.C. Miller, 'Moral Injury and Relational Harm: Analyzing Rape in Darfur', 40 *Journal of Social Philosophy* (2009) 504–523, at 513.

¹⁴¹ Mitchell, *supra* note 99, at 18.

¹⁴² W. Drewery, 'Restorative Practice in New Zealand Schools: Social Development through Relational Justice', 48 *Educational Philosophy and Theory* (2016) 191–203, at 201.

¹⁴³ J.M. Gómez, J.K. Lewis, L.K. Noll, A.M. Smidt and P.M. Birrell, 'Shifting the Focus: Nonpathologizing Approaches to Healing from Betrayal Trauma through an Emphasis on Relational Care', 17 *Journal of Trauma and Disassociation* (2016) 165–185, at 173.

so? Who would be called upon to give evidence of these harms? What would be the ultimate benefits to society? Such questions fall outside the scope of this article, which is not specifically advocating the prosecution of relational harms. Ultimately, what it supports is a relational view of justice¹⁴⁴ within a broader ecological frame. War crimes and human rights abuses can be likened to ‘a stone going through a spider’s web’, thereby rupturing or damaging ‘a whole nexus of interwoven relationships’.¹⁴⁵ Hence, ‘justice’ — as part of a comprehensive approach to dealing with these violations — needs to recognize and, where possible, address relational harms and legacies across social ecological systems.

5. Conclusion

This article began with a quote from Bauman in his discussion of what he calls ‘liquid modernity’. ‘Living under liquid modern conditions’, he writes, ‘can be compared to walking in a minefield: everyone knows an explosion might happen at any moment and in any place, but no one knows when the moment will come and where the place will be’.¹⁴⁶ While such an explosion could potentially take many different forms, the COVID-19 pandemic represents one explosion that caught many of us completely off guard. The speed with which it has spread across the world, however, somewhat decouples this ‘explosion’ from place. Its global nature is both an exemplar of our interconnectivity and a reminder of the vulnerabilities that exist alongside our interconnectedness.

Taking the theme of ecological connectivity as its central thread, this article has sought to ‘connect’ the COVID-19 pandemic, international criminal law, and transitional justice. Discussing COVID-19 (and zoonoses more generally) as both an illustration of ecological connectivity and a concomitant violation of such connectivity, it has framed the pandemic as an opportunity, albeit indirectly, for extending the concept of ecological connectivity in a new direction. Concretely, its theorization of war crimes and human rights abuses as themselves constituting violations of ecological connectivity lays the basis for thinking more ecologically about international criminal law and transitional justice — and more relationally about the harms that they seek to address. This means giving more attention to the relational and ecosystemic legacies of war and armed conflict, both in the very specific

¹⁴⁴ See, for example, P. Casanovas and M. Poblet, ‘Concepts and Fields of Relational Justice’, in P. Casanovas, G. Sartor, N. Casellas and R. Rubino (eds), *Computable Models of the Law: Languages, Dialogues, Games, Ontologies* (Springer Verlag, 2008) 323–339; M. Schluter, ‘What is Relational Justice?’, in J. Burnside and S. Brookes (eds), *Relational Justice: Repairing the Breach* (Waterside Press, 2004) 17–28; S.H. Pillsbury, *Imagining a Greater Justice: Criminal Violence, Punishment and Relational Justice* (Routledge, 2019).

¹⁴⁵ Schluter, *ibid.*, at 24.

¹⁴⁶ Bauman, *supra* note 2, at xiv.

sense of environmental damage and in the extended sense of damage to social ecosystems. The latter, in particular, is consistent with Capra and Mattei's calls for a 'new "ecology of law"', which views social reality 'not as being an aggregate of individual "building blocks" but rather as being composed of social networks and communities'.¹⁴⁷

Research on the ecology of crime has sought to understand how ecological processes — for example, at the neighbourhood or community level — can significantly affect crime.¹⁴⁸ From a different angle, thinking about what crime does to ecologies – and to ecological connectivities — offers a new way of looking at international criminal law and transitional justice. The conceptualization of crimes and human rights atrocities as constituting, in part, violations of ecological connectivity, however, points to a potential broader theorization of international criminal law and transitional justice — which the article has linked to relational justice — in addressing 'disconnections from self, others, cultures, and society at large'¹⁴⁹ as significant relational harms and causes of suffering.

¹⁴⁷ F. Capra and U. Mattei, *The Ecology of Law: Toward a Legal System in Tune with Nature and Community* (Berrett-Koehler Publishers, Inc., 2015), at 19.

¹⁴⁸ See, for example, A. Boessen and J.R. Hipp, 'Close-Ups and the Scale of Ecology: Land Uses and the Geography of Social Context and Crime', 53 *Criminology* (2015) 399–426.

¹⁴⁹ Gómez et al., *supra* note 143, at 172.